GOL VCSEL Tests

HCAL Front-end Electronics

GOL -> VCSEL power tests

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Rev

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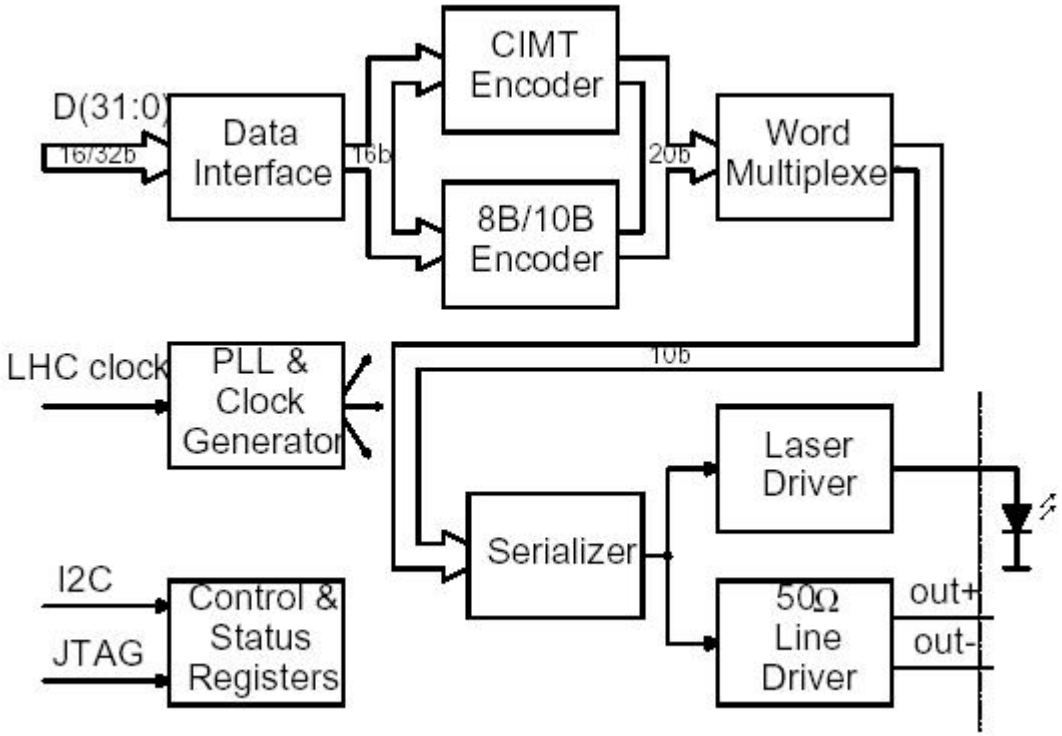
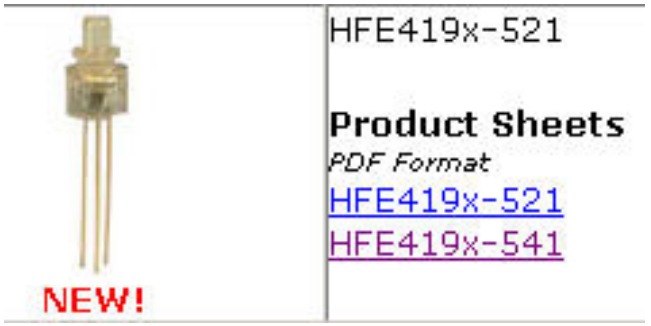
GOL and VCSEL

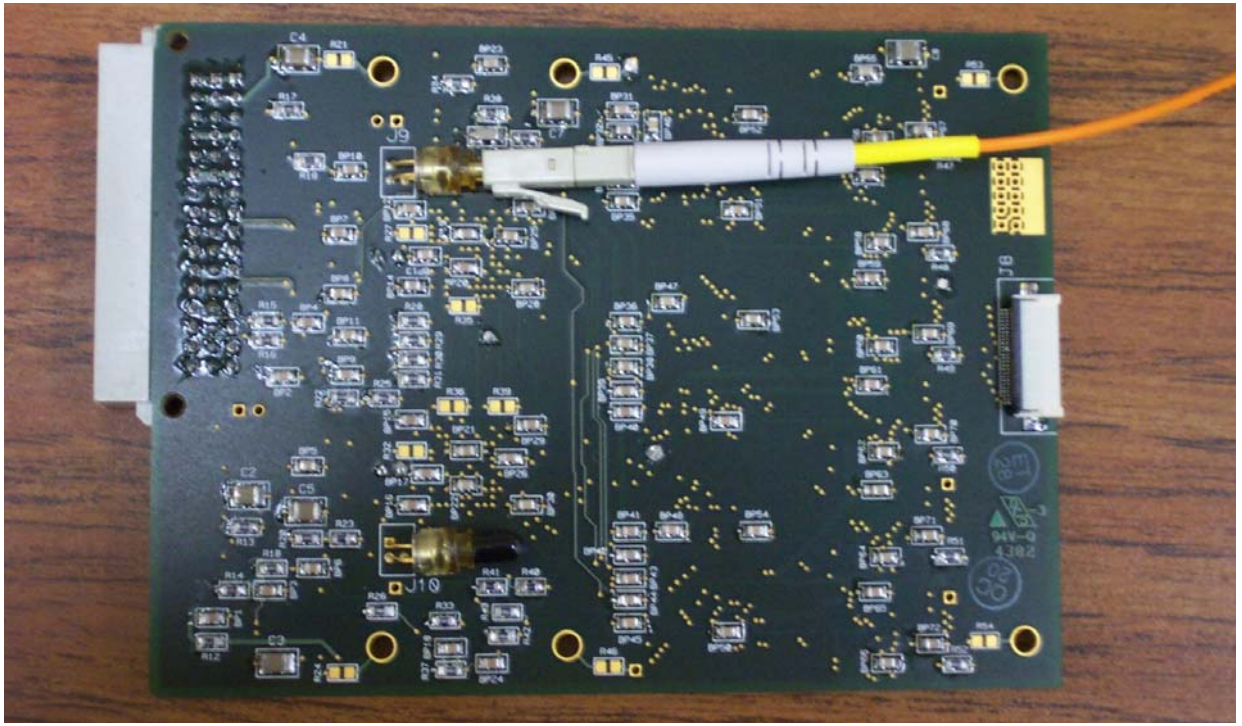
CMS HCAL Front end electronics use a Honeywell VCSEL (HFE4191-541) driven by the GOL





Optical Fiber

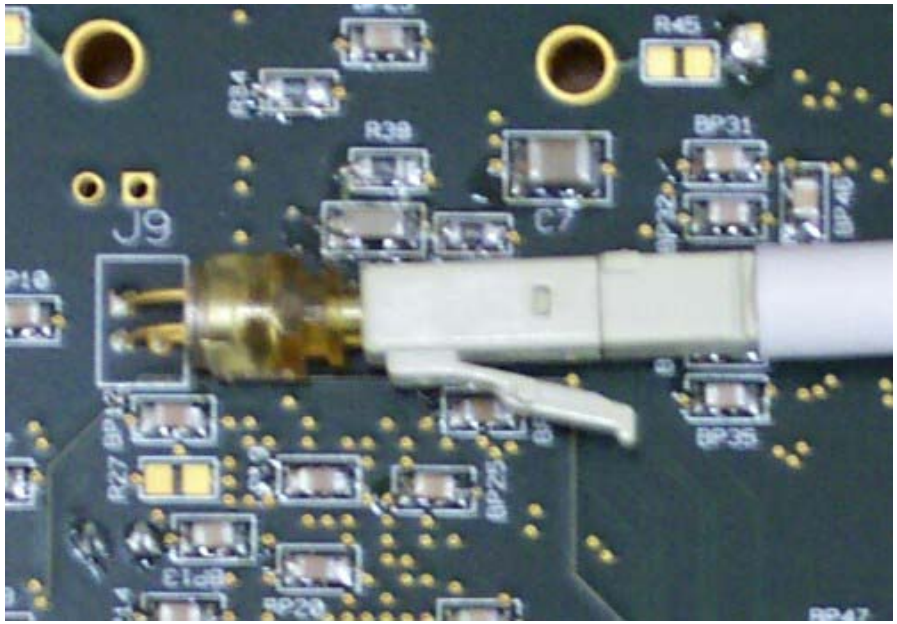
Optical data fiber plugs into VCSEL, located on the back of a Front end module.



VCSEL Fiber Connection

The ferule of the optical fiber is placed into the LC connectorized VCSEL.

- **This is not a locking connection – we must fix the fiber in place. Possible solutions include heat shrink, glue, RTV….**



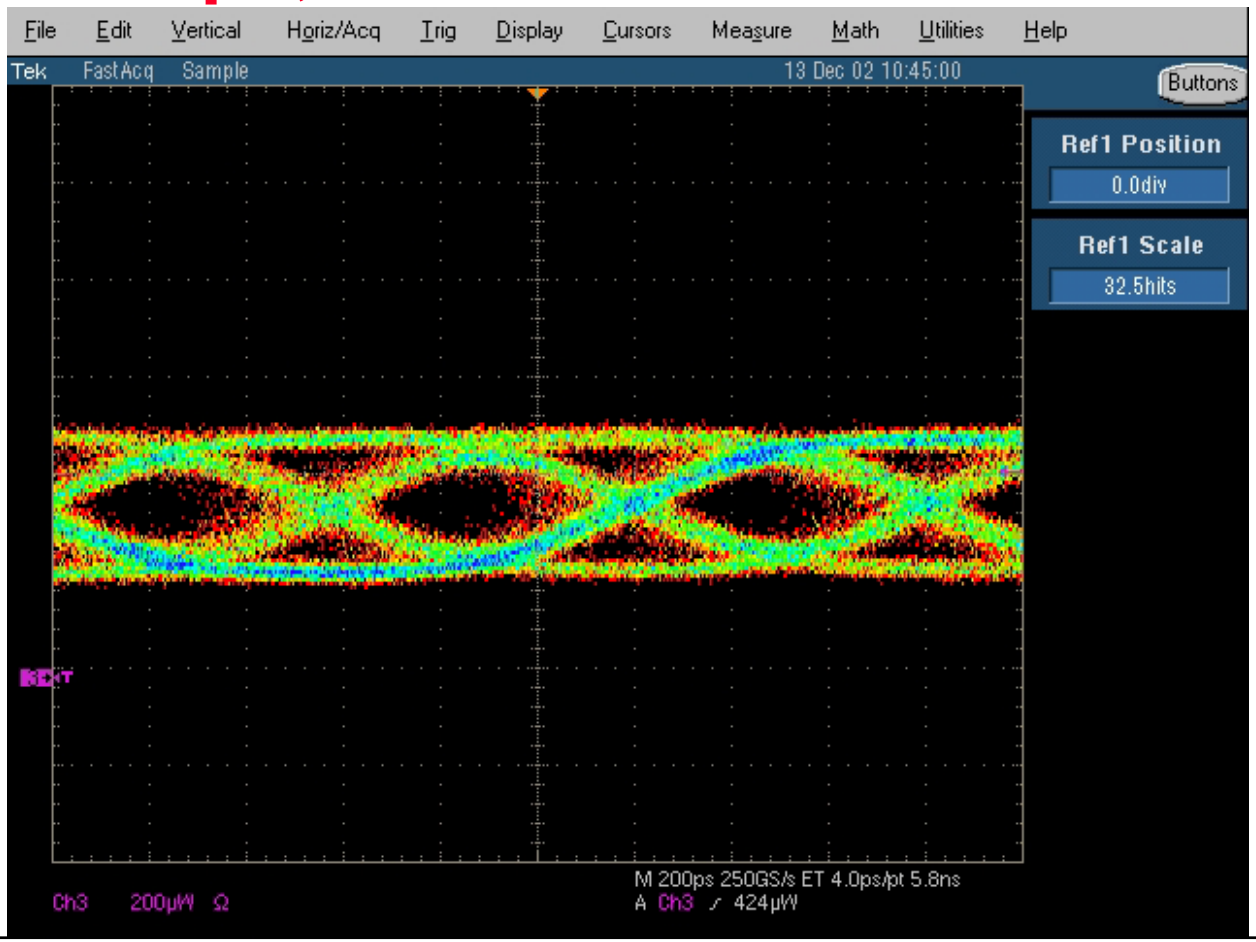
VCSEL Optical Power

H C A L

VCSEL Optical Power is measured to be 572μW with short (1m) optical cable.

Driver test

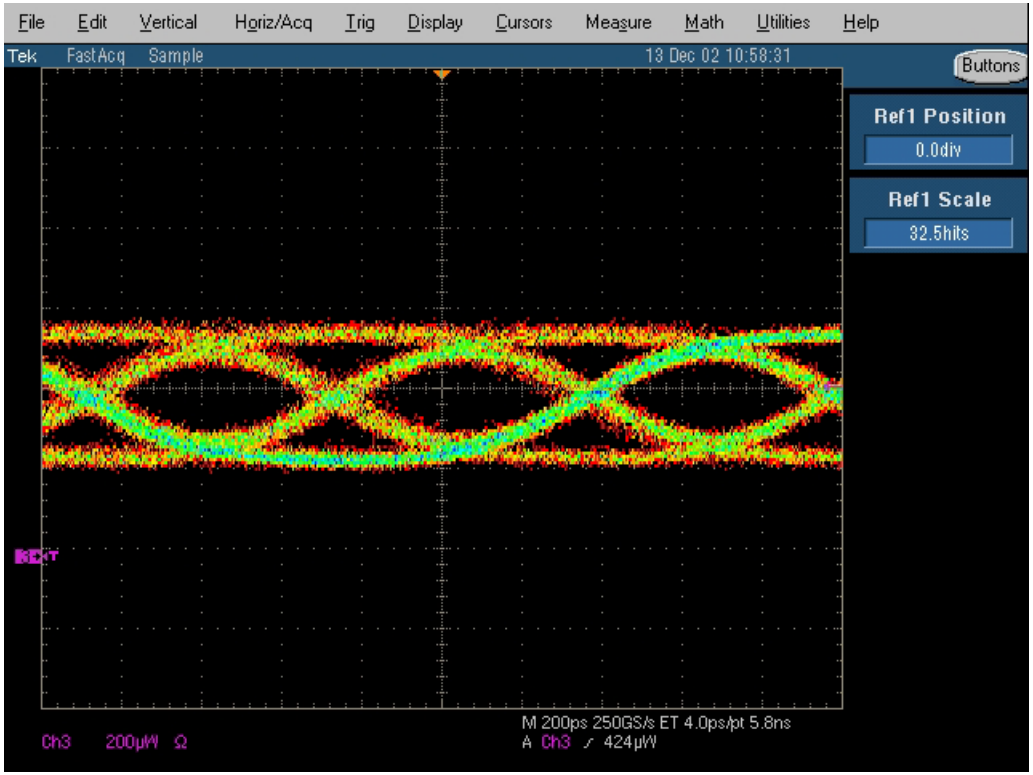
500 ft of 62.5micron cable driven at 1600Mbps, with 4 inline connections.



Driver test

100m of 50micron cable driven at 1600Mbps, with 2 inline connections.

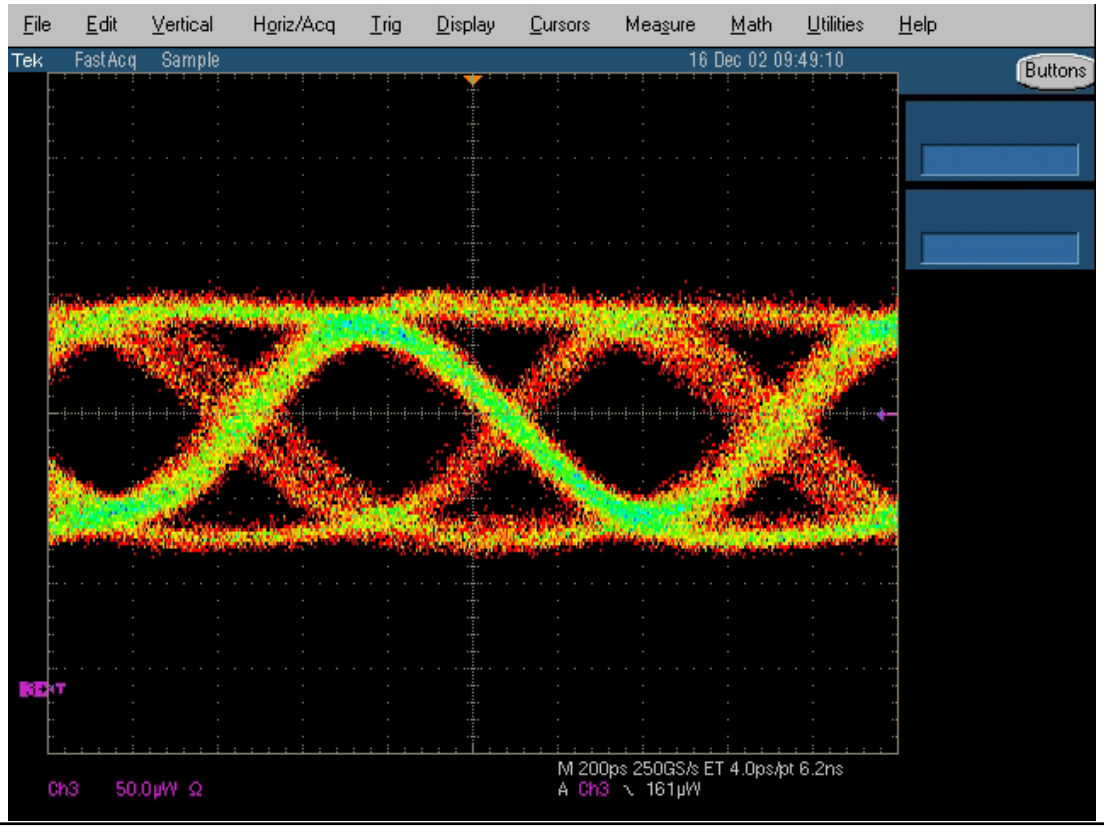
Optical Power at far end 472µw.



Driver test

150+m of 50micron cable driven at 1600Mbps, with 10 inline connections.

Optical Power at far end -7.3dBm (186µw)



Driver test

150+m of 50micron cable driven at 1800Mbps, with 10 inline connections.

Optical Power at far end -7.3dBm (186μw)